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## Immediate blood platelet response modulated by surface chemistry alteration and nano-topography in titanium implant surface

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Surface nano-topography and chemistry alteration are important in the current modification of titanium (Ti) bone implants. Studies have shown that blood platelet response to modified Ti implant surface influences subsequent biological events and ultimate implant bone healing. This study investigated whether the addition of bioactive ions (in this study, Ca) exerts a beneficial effect on immediate platelet activation in a nanostructured Ti implant surface. Results indicate that surface nano-topographical modification positively affects immediate platelet response and surface Ca ion modification further promotes platelet activation. Surface Ca modification increased fibrin network formation and growth factor release (PDGF-AB) in the nanostructured Ti surface. These findings suggest that nano-topographical and chemical surface modification positively modulate immediate blood platelet response to Ti bone implants. Enhanced immediate blood platelet activation seems to be one of important underlying mechanisms for rapid bone healing capacity of surface Ca-modified nanostructured Ti implants.

### Biography

Jin Woo Park has completed his dual PhD from Tokyo Medical & Dental University (Japan) and Chonnam National University (Korea). He is the Head of the Department of Periodontics at Kyungpook National University School of Dentistry and Dental Hospital, Korea. He has published more than 100 papers in reputed journals.

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